

CLAIMS

What is claimed is:

1. A modular welding system, comprising:
 - (a) a basic component system having an operator control module which
5 controls a power supply and controls a wire feeder; and
 - (b) a modular fixture component system which interfaces with said basic
component system, said modular fixture component system having a
particular fixture assembly which performs a particular type of weld.
- 10 2. The welding system of claim 1, wherein said basic component system
further comprises a power supply control module which communicates inputs from
said operator control module to said power supply.
3. The welding system of claim 2, wherein said basic component system
15 further comprises a wire feeder control module which communicates inputs from
said operator control module to said wire feeder.
4. The welding system of claim 3, wherein said basic component system
further comprises an articulated boom which is configured to receive said modular
20 fixture component system.

5. The welding system of claim 4, wherein said modular fixture component system comprises a weld torch which receives said at least one welding wire from said wire feeder.

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6. The welding system of claim 5, where said modular fixture component system comprises an oscillator slide configured to oscillate said weld torch.

7. The welding system of claim 6, wherein said modular fixture
10 component system comprises an oscillator control module in communication with said operator control module, said oscillator control module configured to control said oscillator slide.

8. The welding system of claim 5 wherein said modular fixture
15 component system includes a stiffener fixture frame.

9. The welding system of claim 5 wherein said modular fixture component system includes a butt/tee fixture frame.

20 10. A modular welding system having a basic component system which comprises:

a boom configured to receive at least one welding wire;

a wire feeder coupled to said boom, said wire feeder configured to transfer said at least one wire across said boom; and

an operator's control module configured to control said wire feeder.

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11. The basic component system of claim 10 further comprising a wire feed control module which receives wire feed signals from said operator's control module and controls the communications of said wire feed signals to said wire feeder.

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12. The basic component system of claim 11 further comprising a power supply control module which receives power supply signals from said operator's control module and controls the communications of said power supply signals to a power supply.

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13. The basic component system of claim 12 further comprising a wire straightener which straightens said at least one wire transferred by said wire feeder.

14. A modular welding system having a modular fixture component system, comprising:

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a weld torch configured to receive at least one welding wire from a wire feeder, said weld torch also configured to receive a consumable guide tube which receives said at least one wire, said weld torch configured to communicate power generated by a power supply to said guide tube; and

5 an oscillator slide configured to oscillate said weld torch.

15. The modular fixture component system of claim 14 further comprising at least one manual slide to position said weld torch.

10 16. The modular fixture component system of claim 15 further comprising an oscillation control module which controls said oscillator slide.

17. The modular fixture component system of claim 16 further comprising a weld torch rotator configured to rotate said weld torch.

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18. The modular fixture component system of claim 17 further comprising two weld shoes which define a weld cavity which receives said guide tube.

19. The modular fixture component system of claim 18 having a stiffener
20 fixture frame.

20. The modular fixture component system of claim 18 having a butt/tee fixture frame.